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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,940	06/25/2001	Tye Travis Gribb	66054002	9270

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Intellectual Property Department  
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EXAMINER

NGUYEN, LAM S

ART UNIT PAPER NUMBER

2853

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/888,940

Applicant(s)

GRIBB ET AL.

Examiner

LAM S. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-46 and 48-50 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-23 and 30-38 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12, 24-28, 39-44, 46, and 48-49 is/are rejected.
- 7) ☒ Claim(s) 29, 45 and 50 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3-7, 10, 12, 24, 26, 28, 39-44, 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman et al. (Multilayer Anode with Crossed Serpentine Delay Lines for High Spatial Solution Readout of Microchannel Plate Detectors) (*filed by the applicants*) in view of Meijer (US 3581091).

Friedman et al. discloses a particle detector comprising first and second delay line anodes (*FIG. 2, 4: the upper delay line and lower delay line anodes*), wherein:

- a. the first and second delay line anodes each include an elongated signal line thereon (*FIG. 4, Upper delay line and lower delay line*);
- b. the first delay line anode has a first anode active area upon which particles impinge, the first anode active area containing at least a portion of the first delay line anode's elongated signal line thereon (*FIG. 1*);
- c. the second delay line anode has a second anode active area which receives particles from the first anode active area (*page 599, left column, first paragraph: The electrons travel through the plane of the upper delay line to reach the lower delay line*);
- d. the second anode active area contains a length of the second delay line anode's

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elongated signal line, the length having a configuration and dimensions identical to the portion of the first delay line anode's elongated signal line resting within the first anode active area (Fig. 2) (Referring to claims 6, 39, 42).

Friedman et al. does not disclose wherein the first and second delay line anodes are adjustably mounted in spaced relation to have adaptable spacing therebetween (Referring to claims 1, 26, 39, 47), wherein no structure is interposed between the active areas of the first and second delay line anodes (Referring to claims 3, 24), and wherein at least one of the first and second anodes is defined by metallic foil layers laminated onto opposing sides of a thermoplastic film (Referring to claim 43).

Meijer discloses a particle detector having a first and second anodes, wherein no structure is interposed between the anodes (FIG. 2, element 2 and 5) so the space between the anodes is adaptably adjustable (column 1, line 15-25 and column 2, line 32-37: *The distance between the two anodes 2,5 depends on the diameter of the anodes 2, 5*), wherein the first and second anodes each includes an elongated signal line thereon (FIG. 2, elements, 3-4, 6-7); and wherein at least one of the first and second anodes is defined by metallic foil layers laminated onto opposing sides of a thermoplastic film (column 2, lines 24-32).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the detector disclosed by Friedman et al. such as no structure is interposed between the anodes so the space between the anodes is adaptably adjustable as disclosed by Meijer. The motivation for doing so would have been to obtain a spectrometer which makes more accurate determination possible as taught by Meijer (column 1, lines 53-55).

**Friedman et al. also discloses the following claimed invention:**

**Referring to claims 4-5, 40-41:** wherein the first and second delay line anodes are identical and are interchangeable within the particle detector without substantial effect on detector performance (*FIG. 1: Each delay line for X or Y direction so the delay lines are interchangeable*).

**Referring to claims 7, 28:** wherein the first and second delay line anodes each include a signal layer (*FIG. 4: The upper delay line and lower delay line*) and a ground layer (*FIG. 4: The upper ground plane and lower ground plane*) with a dielectric layer (*FIG. 4: The dielectric layers are between the upper/lower delay line and the upper/lower ground plane*) interposed therebetween, the signal layer having an elongated signal line defined thereon, and wherein the signal line of the first delay line anode is identical to the signal line of the second delay line anode (*FIG. 4: Both are made of Cu*).

**Referring to claims 10, 44:** wherein at least one of the first and second delay line anodes is formed of flex circuit material (*page 599, left column, second paragraph: Fabrication of the anode begins with standard photolithography of two, double-sided, copper-clad, RT/duroid 6010 ceramic-filled PTFE dielectric boards*).

**Referring to claims 12, 46:** wherein the first and second delay line anodes include active areas whereupon particles impinge, with the active area of the second delay line anode receiving particles from the active area of the first delay line anode, parallel lengths of signal line, wherein several lengths extend at least partially outside of the anode's active area, and the lengths of signal line in the first delay line anode extend at a non-parallel angle with respect to the lengths of signal line in the second delay line anode (*FIG. 1-2, 4: The upper delay line and the lower delay line are orthogonal*).

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2. Claims 2, 25, 27, 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman et al. (Multilayer Anode with Crossed Serpentine Delay Lines for High Spatial Solution Readout of Microchannel Plate Detectors) (*filed by the applicants*) in view of Meijer (US 3581091), as applied to claims 1, 24, 39, and further in view of Mendez et al. (US 3359421).

Friedman et al., as modified, discloses the claimed invention as discussed above except wherein the first anode active area and second anode active area of the delay line anodes are space by vacuum or a gas.

Mendez et al. discloses an apparatus for detecting and locating the trajectories of charged particles (*column 1, lines 10-15*) having a plurality of anodes spaced apart (*FIG. 1, elements 14, 16, 17*), wherein the space is filled with a noble gas such as He, Ne (*FIG. 1, element 13*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the particle detector disclosed by Friedman et al., as modified, such as filling a gas into the space between the anodes as disclosed by Mendez et al. The motivation of doing so is to provide improved means for detecting and recording the charged particle tracks as taught by Mendez et al. (*column 2, lines 64-66*).

#### ***Allowable Subject Matter***

3. Claims 13-23, 30-38 are allowed and Claims 29, 45, and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reasons for allowance of the claims were indicated in the previous office action.

#### ***Response to Arguments***

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Applicant's arguments filed 03/09/2005 regarding to the 112(1) and (2) rejections have been fully considered and persuasive.

However, the arguments regarding to the 103 rejection have been found not persuasive.

First of all, the applicants argued that Meijer does not teach or suggest adjustable spacing between the delay line anodes. The examiner responds that, as broadly interpreted, the claims are understood as the anodes adaptably mounted in a space, wherein the length of the space between the anodes is adjustable. As clearly shown in FIG. 1, since there is no fix structure between the anodes, an anode is free to relatively move from the other. In other words, the space between the anodes can be adjusted.

As regarding to arguments relating to claims 4-5 and 40-41, the applicants argued that neither reference offers any disclosure or suggestion of the first and second delay line anodes are identical. In response, the examiner cites that Friedman in FIG. 1 discloses two identical delay lines arranged orthogonal on different planes.

As regarding to arguments relating to claims 10 and 44, the applicants argued that Friedman does not disclose the use of flex circuit material. However, the applicants did not show why Rt/duroid 6010 ceramic-filled PTFE dielectric is not a flex material. In addition, with the thickness disclosed in the cited prior art, the anode boards are believed to be bendable (flexible). Moreover, the bonding of the anodes on the bass plate only means that the whole structure is not bendable, but does not mean that the anode boards, themselves, are not bendable (flexible).

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN  
April 28, 2005

  
HAI PHAM  
PRIMARY EXAMINER